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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,004

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EXAMINER

ADMASU, ATNAF S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

03/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/590,004

Applicant(s)

HIGUCHI ET AL.

Examiner

ATNAF ADMASU

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,8-13,18-20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8-13,18-20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1, 3 - 5, 8 - 13, 18 - 20 and 22 are pending as amended on 27 October 2008. Claims 2, 6, 7, 14 - 17 and 21 are cancelled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1, 3 - 5, 8 - 13, 18 - 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,923,950 (Gump hereinafter).

Gump teaches process for the production of stabilized acrylic fibers and films which are capable of undergoing carbonization comprises: (a) providing a solution of an acrylic polymer, (b) an organic antioxidant, and (c) a solvent for the acrylic polymer and the organic antioxidant and then forming from the solution an acrylic fibrous material or film (col. 2, lines 28 - 44).. Gump further teaches the organic antioxidant is aromatic amine compounds such as 2-aminophenol, 2,4,6-triaminophenol and 2-amino-4-nitrophenol (col. 3, lines 56 - 63). Suitable organic solvents include N,N-dimethylformamide, N,N-dimethylacetamide, dimethyl sulfoxide and N-methyl-2-pyrrolidinone. The concentration of the acrylic polymer in the solvent may be about 5 to 30 percent by weight based upon the weight of the solvent (col. 5, lines 17 - 39). The solution containing the acrylic polymer is converted into fiber or film by extrusion in

which much of the solvent is evaporated (col. 5, line 67 - col. 6, line 12). Gump further discloses acrylic films of relatively thin thickness, e.g., about 1 to 10 mils (i.e., 0.025 to 0.25 mm), may be formed (col. 6, lines 41 - 43).

4. Claims 1-7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiang et al. ("Studies of reactions with Polymers. VI. The Modification of PAN with Primary Amines").

Regarding claims 1-3, 6, and 7, Chiang et al. discloses a polyacrylonitrile polymer that is dissolved in DMSO and denatured with an amine [pages 1623-4].

Regarding claim 4, since the applicant's solution is not consisting only of a polymer and a polar organic solvent, the examiner takes the position that the solution comprises of a polymer and a polar organic solvent, but may include other solvents, such as DMSO. See MPEP 2111.03. The polymer must then be dissolved in the amine solvent before it is reacted.

Regarding claim 5, Chiang et al. discloses that ethylenediamine was used as one of the amines in the experiments [page 1623].

Regarding claims 9 and 10, the methods are disclosed in the experiments described [page 1624].

Response to Arguments

5. Applicant's arguments, filed 27 October 2008, with respect to the disclosure of US Patent 3,900,285 (Ono hereinafter) in which Ono's process does not include

dissolving a fiber in a polar organic solvent has been fully considered and are persuasive. The rejections of claims 1 – 3, 7, 8, 11 – 13, 18 – 20 and 22 under 35 USC 102(b) as being anticipated by Ono has been withdrawn.

However, upon further consideration, a new ground of rejection is made in view of US Patent 3,923,950 (Gump).

6. With regards to Applicant's argument of claims 1 – 7, 9 and 10 rejection under 35 U.S.C. 102(b) anticipated by Chiang that the reference fails to show certain features of Applicant's invention, it is noted that the features upon which Applicant relies (i.e., the acrylonitrile polymer may be a precursor of the flame-resistant polymer) are not cited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

7. Ono (US 3,900,285), cited as an X-reference on the international search report for PCT/JP05/02564, from which the instant application claims priority, teaches contacting acrylic fiber with hydroxylamine at a pH of not higher than 7 but fails to teach the presence of polar organic solvent.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATNAF ADMASU whose telephone number is (571)270-5465. The examiner can normally be reached on M-F 8:00-5:30, Alternative Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ASA/

/Timothy J. Kugel/
Primary Examiner, Art Unit 1796